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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/478,799	01/07/2000	Masanobu Hayama	23.1090	2190

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[REDACTED] ART UNIT

[REDACTED] PAPER NUMBER

2675

DATE MAILED: 09/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/478,799	HAYAMA ET AL.
	Examiner Uchendu O Anyaso	Art Unit 2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 13 August 2002.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-17,20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-17,20 and 21 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____ .
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

1. **Claims 1-17, 20 and 21** are pending in this action.

Claim Rejections - 35 USC '103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-17, 20 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Rowe* (U.S. Patent 5,442,377) in view of *Siddiqui* (U.S. 5,912,661).

Regarding **independent Claims 1, 2, 11 and 12**, and for **claims 4, 9, 10 and 13**, *Rowe* teaches an input device that provides a multi-axis continuous loop or boundaryless input device for control of a pointer or cursor on a computer screen or other graphical displays (column 3, lines 3-6).

Furthermore, *Rowe* teaches a roller bearing (20) that is connected to a wheel having indicia (26) uniformly spaced about surface 28 of rotation sensor (24) so that the roller bearing (20) rotates about its longitudinal axis in response to movement of spheres (12a-c) (column 4, lines 50-59, figure 1 at 24, 26).

Furthermore, *Rowe* teaches a plurality of rotating bodies (12, 12a-12c) in the shape of spheres and are rotatably disposed on the circumferential edge of the roller bearing (20) in the (column 4, lines 50-59, figure 1 at 12, 12a-12c, 24, 26).

Also, *Rowe* teaches a detector (30) that is responsive to the indicia (26) in order to generate a signal which may be processed and communicated to the cursor or pointing device to achieve movement of the cursor (*see column 5, lines 2-13, figure 1 at 12a-c, 30; see generally column 1, lines 15-23*).

However, *Rowe* does not teach a wheel rotating detection means. On the other hand, *Siddiqui* teaches a mouse (12) having a rotating wheel button (22) with an optical encoding wheel (44), and axle (30) which had left and right bearing surfaces (36, 38) which are all mounted along the circumference of the wheel (column 3, lines 3-8, figure 2 at 12, 22, 30, 36, 38 & 44), and a light detector (48) which serve as a detection means by sensing the motion of the optical encoder which is along the surface of the wheel (22), and then providing a positioning signal (*see Abstract; see also column 3, lines 43-51, figure 2 at 12, 44 & 48; column 4, 33-40, figure 7*).

Thus, it would have been obvious for a person of ordinary skill in the art to combine *Rowe* and *Siddiqui*'s inventions because while *Rowe* teaches an input device for control of a pointer or cursor on a computer screen that utilizes a roller bearing (20) connected to a wheel having indicia (26) uniformly spaced about surface 28 of rotation sensor (24) so that the roller bearing (20) rotates about its longitudinal axis in response to movement of spheres (12a-c) (column 4, lines 50-59, figure 1 at 24, 26), *Siddiqui* teaches a wheel rotating detection means by teaching a rotating wheel button (22) with an optical encoding wheel (44), and axle (30) which has left and right bearing surfaces (36, 38) which are all mounted along the circumference of the wheel (column 3, lines 3-8, figure 2 at 12, 22, 30, 36, 38 & 44), and a light detector (48) which serves as a detection means by sensing the motion of the optical encoder which is along the

surface of the wheel (22), and then providing a positioning signal . The motivation for combining these inventions would have been to provide a more efficient tactile and aural feedback to a user of this input device when a user depresses the input device or rotates the wheel (column 1, lines 60-63).

Furthermore, *Siddiqui* teaches a format change-over switch and a data transmission means by teaching left and right click buttons (18, 20) with their respective left and right microswitches (54, 56) and how they are manipulated with the wheel to operate the input device (column 4, lines 11-20, figure 7 at 18, 20, 54 & 56) with a third switch in the form of a switch engager (50) which depresses the switch button (51) of a microswitch (52) when the wheel button (22) is depressed (column 4, lines 11-20, figure 7 at 22, & 50-52). Also, *Siddiqui* teaches a detecting means for the third switch by teaching that microswitch (52) is mounted on a circuit board (28), along with left and right microswitches (54, 56) that are activated by left and right mouse buttons (column 4, lines 11-20, figure 7 at 28, 52, 54 & 56). This provides a detection means for detecting the operating state of the switches and also enables the mouse buttons (18, 20) to provide tactile and aural feedback to a user who depresses the wheel (22) (column 4, lines 11-20, figure 7 at 18, 20 & 22).

Regarding **Claims 3 and 12**, in further discussion of claims 2 and 11, *Siddiqui* teaches/shows a ratchet construction of his invention wherein the wheel is adapted to fit in this ratchet construction (*see figures 2 & 3*).

Regarding **Claims 5-8 and 14-17**, in further discussion of claims 1 and 10, *Rowe* teaches/shows the cylindrical and spherical configurations of the rotating bodies (column 4, lines 50-59, figure 1 at 12, 12a-12c, 24, 26).

Regarding **Claims 20 and 21**, in further discussion of claims 11, *Siddiqui* teaches a detent mechanism (40) and a detent spring (42) that provides tactile and aural feedback to a user to allow precise control of the rotation of the axle (30) that is used to control the wheel (22) (column 3, lines 66 to column 4, lines 1-10, figure 2).

Response to Arguments

4. Applicant's arguments filed June 13, 2002 and July 19, 2002 have been fully considered but they are not persuasive.

Regarding independent claims 1, 2, 11 and 12, Applicant argues that as amended, these claims include the distinguishing features of a format change-over switch, a data transmission means, and a wheel rotating state detection means. These aspects of applicant's amendment is fully addressed by the combination of *Rowe* and *Siddiqui*'s teachings wherein, *Rowe* teaches a plurality of rotating bodies (12, 12a-12c) in the shape of spheres and are rotatably disposed on the circumferential edge of the roller bearing (20) in the (column 4, lines 50-59, figure 1 at 12, 12a-12c, 24, 26), and *Siddiqui* teaches a format change-over switch and a data transmission means by teaching left and right click buttons (18, 20) with their respective left and right microswitches (54, 56) and how they are manipulated with the wheel to operate the input device (column 4, lines 11-20, figure 7 at 18, 20, 54 & 56) with a third switch in the form of a switch

engager (50) which depresses the switch button (51) of a microswitch (52) when the wheel button (22) is depressed (column 4, lines 11-20, figure 7 at 22, & 50-52). Also, *Siddiqui* teaches a detecting means for the third switch by teaching that microswitch (52) is mounted on a circuit board (28), along with left and right microswitches (54, 56) that are activated by left and right mouse buttons (column 4, lines 11-20, figure 7 at 28, 52, 54 & 56). This provides a detection means for detecting the operating state of the switches and also enables the mouse buttons (18, 20) to provide tactile and aural feedback to a user who depresses the wheel (22) (column 4, lines 11-20, figure 7 at 18, 20 & 22).

Furthermore, although *Rowe* does not teach a wheel rotating detection means, *Siddiqui* teaches a mouse (12) having a rotating wheel button (22) with an optical encoding wheel (44), and axle (30) which had left and right bearing surfaces (36, 38) which are all mounted along the circumference of the wheel (column 3, lines 3-8, figure 2 at 12, 22, 30, 36, 38 & 44), and a light detector (48) which serves as a detection means by sensing the motion of the optical encoder which is along the surface of the wheel (22), and then providing a positioning signal (see Abstract; see also column 3, lines 43-51, figure 2 at 12, 44 & 48; column 4, 33-40, figure 7).

The motivation for combining these inventions would have been to provide a more efficient tactile and aural feedback to a user of this input device when a user depresses the input device or rotates the wheel (column 1, lines 60-63).

As such, applicant's amendment claim is obvious by the combination *Rowe* and *Siddiqui*'s teaching, and thus, renders applicant's arguments non-persuasive.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Uchendu O. Anyaso** whose telephone number is **(703) 306-5934**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Steve Saras**, can be reached at **(703) 305-9720**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is **(703) 306-0377**.

Uchendu O. Anyaso

09/08/2002



UCHENDU O. ANYASO
PRIMARY EXAMINER